ANNUAL REPORT

1963

VILLAGE OF FENELON FALLS

WATER SYSTEM

ONTARIO WATER RESOURCES COMMISSION

ANNUAL REPORT

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FENELON FALLS

WATER TREATMENT PLANT

INCEPTION

On August 21, 1957 the Town of Fenelon Falls and the Ontario Water Resources Commission initiated plans for the construction of a modern water treatment plant and distribution system.

The firm of Franklin McArthur Associates Limited, Consulting Engineers was engaged to prepare plans and specifications.

APPROVAL

In early 1961, approval was obtained from the Ontario Municipal Board for the construction of the project. In 1961, the Village signed an agreement with the Ontario Water Resources Commission to finance, construct and operate the plant.

CONSTRUCTION

H.J. McFarland Company, Picton, Ontario was awarded the contract for the project on March 8, 1961. The Division of Plant Operations of the Ontario Water Resources Commission took over operations in October, 1961.

Total capital cost ..... $303,606.14.

DESIGN CRITERIA

General

Type of Plant - Water Treatment

Design Population - 1,300

Design Plant Flow - 130,000 gallons per day

Per Capita Flow - 100 gallons per day per capita

GENERAL DESCRIPTION OF WATERWORKS

Source of Supply

The source of supply is Cameron Lake.

The purpose of the water treatment plant is to reduce the turbidity of the lake water to a level where it is acceptable by the Ontario Water Resources Commission standards.

Intake Works

Water is delivered to the plant by means of an 18 inch diameter corrugated metal conduit 710 feet in length.

Screening

There is a manually cleaned screen with 1/2 inch openings at the inlet to the pump suction well.

Pump Suction Well

The pump suction well has a capacity of 13,750 gallons.

Filters

There are two cylindrical pressure filters, each eight feet in diameter. Each unit has a capacity of 126 gpm when operating at a rate of 2.5 gpm/ft.^{2} of surface and at a pressure of 75 psi.

The piping arrangement is such that the filters may be operated singly or in parallel. One filter may be backwashed while the second unit remains in operation.

Clear Water Storage

A small clear well is provided. This unit has capacities of 3,860 gallons and 5,720 gallons at the low and high water levels respectively.

Surge Tank

A six foot diameter steel surge tank is connected directly to the discharge main to eliminate sudden pressure changes in the system.

Instrumentation

A Fisher-Porter flow recording and totalizing device is provided on the discharge main. This device controls the chlorine feed rate.

Chlorination

Chlorine is applied to the pump suction well by means of a Fisher-Porter gas chlorinator.

PUMPING EQUIPMENT

Service Pumps

Two Allis Chalmers horizontal centrifugal pumps with a capacity of 170 IGPM each at a T.D.H. of 175 feet are provided. Each pump is powered by a 15 H.P. electric motor.

These pumps draw from the intake well and discharge to the inlet of the pressure filters.

Backwash Pump

The backwash pump is a Canada Pump horizontal centrifugal type with a capacity of 510 IGPM at a T.D.H. of 40 feet. This pump has a 10 HP Tamper Electric motor as a power supply.

This unit draws from the clear well.

Standby Fire Pump

One Babcock-Wilcox and Goldie-McCullock horizontal centrifugal pump with a capacity of 380 GPM at a T.D.H. of 150 feet. The power supply for this pump is a 54.2 B.H.P. Wisconsin four cylinder gasoline engine.

In the event of an emergency, this automatic start manual stop unit pumps directly from the pump suction well to the distribution system by-passing the filters.

DISTRIBUTION SYSTEM

The system has the following lengths and sizes of installed watermains:

18,346.7 ft. 6" asbestos cement pipe

5,335.0 ft. 8" asbestos cement pipe

3,479.0 ft. 10" asbestos cement pipe

There are 76 - 6" hydrants on the system for fire protection.

PROJECT STAFF

Thomas Bradbrooke

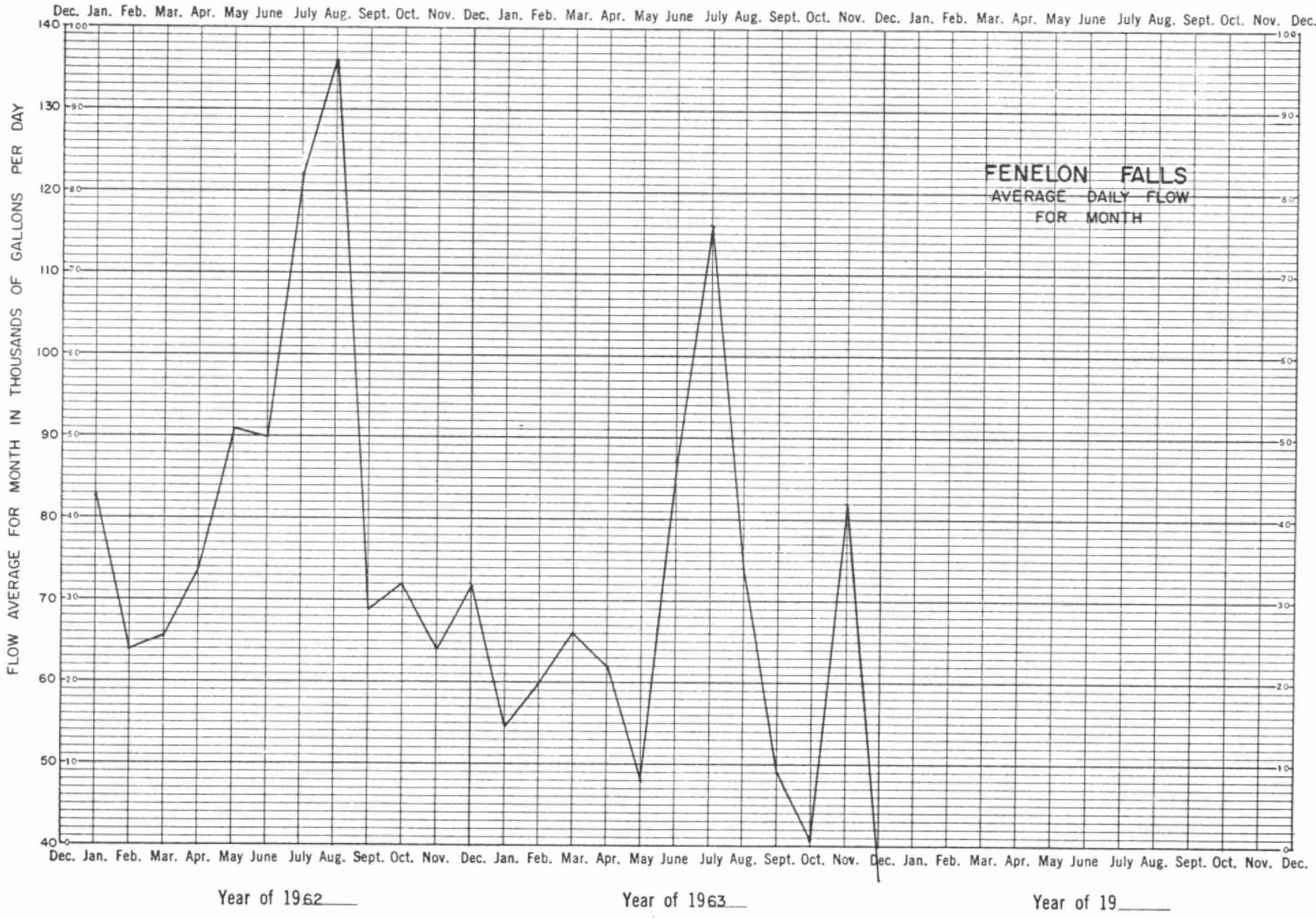
Mr. Bradbrooke was transferred from his job as municipal operator to the Ontario Water Resources Commission staff on March 1, 1962.

Casual labour is required when Mr. Bradbrooke is sick or during his holidays and occasionally when the work load exceeds the operator's capacity.

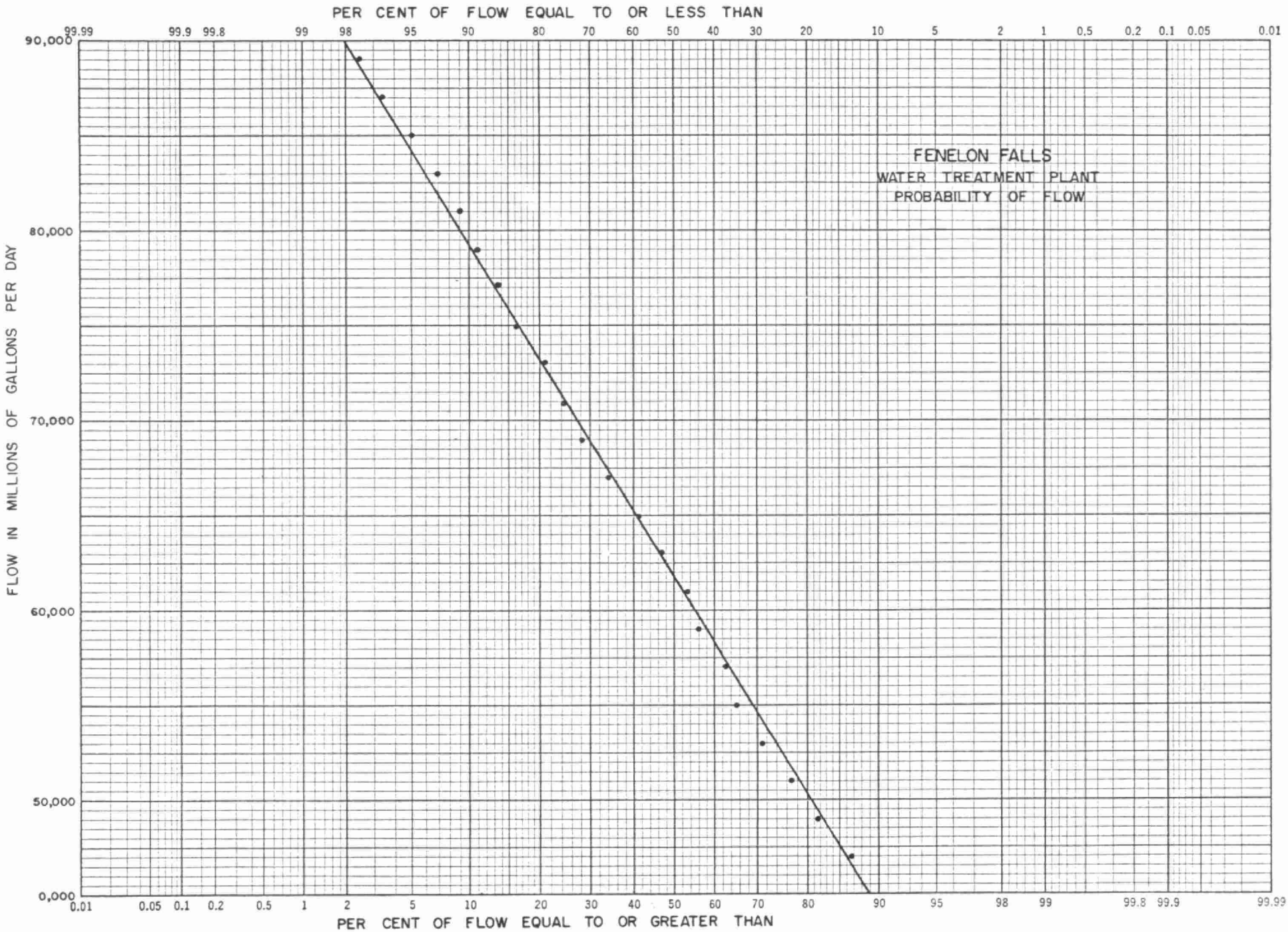
GC 8-66

Three Years by Months X 100 Divisions

MADE IN CANADA



Year of 1962 Year of 1963 Year of 19____


PER CENT OF FLOW EQUAL TO OR LESS THAN
99.99 99.9 99.8 99 98 95 90 80 70 60 50 40 30 20 10 5 2 1 0.5 0.2 0.1 0.05 0.01
FLOW IN MILLIONS OF GALLONS PER DAY
90,000
80,000
70,000
60,000
50,000
0,000
FENELON FALLS
WATER TREATMENT PLANT
PROBABILITY OF FLOW
0.01 0.05 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
PER CENT OF FLOW EQUAL TO OR GREATER THAN

BACTERIOLOGICAL RESULTS

DATE		LAKE SAMPLES TAKEN AT VARIOUS POINTS IN THE SYSTEM COLIFORM ORGANISMS PER 100 ml	PUMPHOUSE	REMARKS
January	7	0	0	
	8	0		
	14	0	0	
	21	0	0	
	28	0	0	
February	11	0	0	
March	25	0	0	
June	3	0	0	
	13	0		
	14	0		12 samples - 0
July	17	0		
	22	0		
August	12	0		
	13	0		
		0		
	13	0		
		0		
	13	0		
September	3	0	0	
	12	0	0	
	24			
		0		
	30	0	0	

BACTERIOLOGICAL RESULTS (Cont'd)

DATE	LAKE	SAMPLES TAKEN AT VARIOUS POINTS IN THE SYSTEM COLIFORM ORGANISMS PER 100 ml	PUMPHOUSE	REMARKS
October 15		0		
21		0		
29	110		0	
November 21	12	0		
December 2		0		

CHEMICAL RESULTS

	HARDNESS AS $CaCO_3$	ALKALINITY AS $CaCO_3$	IRON AS Fe	CHLORIDE AS Cl	PH AT LAB	COLOUR IN HAZEN UNIT	TURBIDITY
June 28 Pumphouse Well	62	42	0.32	5	7.0	25	0.5
August 5 Cameron Lake	60	58	0.20	5	8.3		
October 21 Cameron Lake	56	48	0.12	3	7.0	15	0.6
November 25	58	46	0.10	3	7.6	25	1.5

CHLORINATION

MONTH	PLANT FLOW (MG)	POUNDS CHLORINE (MONTH)	DOSAGE RATE (PPM)
JANUARY	1.70	59.	3.5
FEBRUARY	1.68	59.	3.5
MARCH	2.04	61.	3.0
APRIL	1.87	69.	3.7
MAY	1.51	69.	4.6
JUNE	2.63	127.	4.8
JULY	3.60	134.	3.7
AUGUST	2.29	83.	3.6
SEPTEMBER	1.47	83.	5.6
OCTOBER	1.29	66.	5.1
NOVEMBER	1.86	69.	3.7
DECEMBER	1.13	49.	4.3
TOTAL	22.597	927.	
AVERAGE		77.2	4.1

COMMENTS

FROM THIS TABLE IT WILL BE NOTED THAT AN AVERAGE DOSAGE OF 4.1 PPM CHLORINE IS REQUIRED TO OBTAIN A RESIDUAL CHLORINE OF 0.3 PPM.

1963

PLANT — **Total Operating Costs** * — **MONTHLY**

MONTH	TOTAL EXPENDITURE	PAYROLL	CASUAL PAYROLL	FUEL	POWER	CHEMICAL	GENERAL SUPPLIES	EQUIPMENT	REPAIRS & MAINTENANCE	SUNDRY	WATER
JAN	398	305	--	--	--	--	63	--	--	29	--
FEB	339	313	--	--	--	(70)	(28)	--	107	17	--
MARCH	512	349	--	--	--	--	21	--	85	57	--
APRIL	330	292	--	--	--	--	25	--	--	13	--
MAY	381	292	--	--	--	--	35	6	--	47	--
JUNE	453	292	--	--	--	--	56	--	--	105	--
JULY	808	438	--	--	--	278	46	--	16	30	--
AUG	731	292	238	--	--	--	77	--	100	25	--
SEPT	557	292	184	--	--	(105)	58	--	113	15	--
OCT	577	292	198	--	--	--	28	--	30	29	--
NOV	450	292	208	--	--	(70)	20	--	--	--	--
DEC	795	438	193	--	--	--	51	--	3	109	--
TOTAL	6331	3890	1020	--	--	33	452	6	455	476	--

*ALL FIGURES TO NEAREST DOLLAR

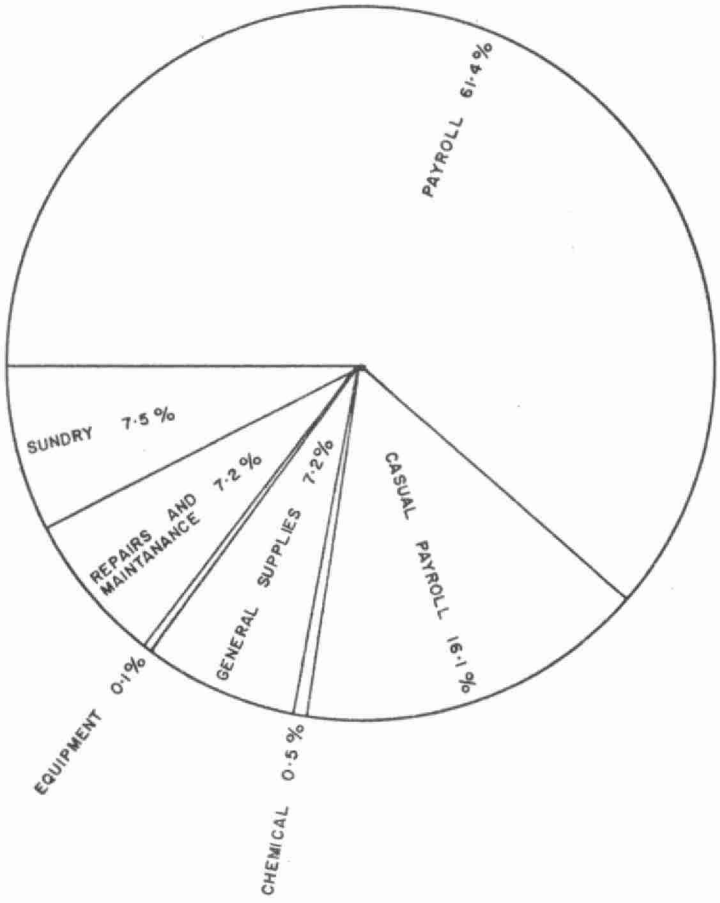
POWER BILLS PAID BY MUNICIPALITY

() DENOTES A CREDIT

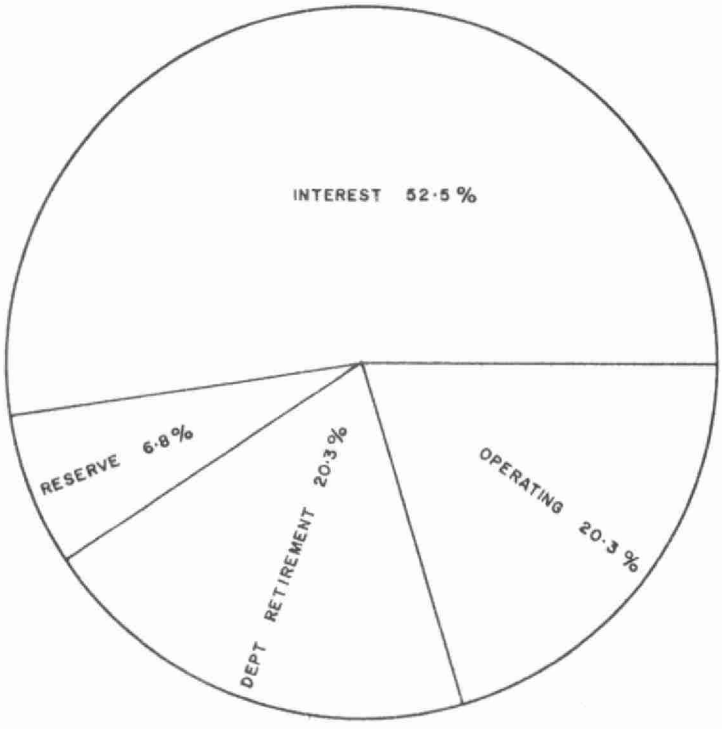
PLANT — **YEARLY**

YEAR	M.G. TREATED	TOTAL COST	COST PER MILLION GALLONS	COST PER CAPITA PER YEAR
XXXX				
1962	30.7	5582	180	5.58
1963	22.6	6331	280	6.33

OPERATING COSTS



TOTAL COST



TOTAL 1963 COSTS

Total costs to the municipality during 1963 was as follows:

Operating	$ 6,366.04
Debt Retirement	6,371.00
Reserve	2,190.00
Interest	16,462.23
TOTAL	$31,389.27

NOTE:

The amount in the Reserve for Contingency Account as of December 31, 1963 was $4,573.19.

SUMMARY

This report has given in detail significant data on the operation of the Fenelon Falls Water Treatment Plant.

The Village of Fenelon Falls used a total of 22.60 million gallons during 1963. This is an average of 61,500 gallons per day. This is considerably less than the design plant flow of 360,000 gallons per day.

The water pumped into the distribution system in 1963 was bacteriological very good. There were no coliform organisms obtained at any time.

The operating costs at the plant were slightly increased in 1963. This was due mainly to casual labour and to the extension of the distribution system in the fall of the year. It should also be pointed out that the operating costs do not include the cost of power which is paid from municipal funds.

As the plant gets older, the operating costs will naturally increase because of increased power, chemical supplies and more maintenance and repair to mechanical equipment.

The plant has been operated in a manner satisfactory to the standards of the Ontario Water Resources Commission. The operator should be commended for his efforts.

The operation of the system is under the supervision of head office engineers whose object is to operate and maintain a clean, attractive and efficient plant for the Village of Fenelon Falls as economically as possible. Visitors are always welcome to tour the facilities.

June 1964

Division of Plant Operations

ONTARIO WATER RESOURCES COMMISSION
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